Alliance for Transportation Electrification

Non-Residential Rate Considerations

ILLINOIS COMMERCE COMMISSION
BENEFICIAL ELECTRIFICATION WORKSHOP

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Elements of Utility Best Practices

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- Utility programs should be developed as part of transportation electrification plans, developed with stakeholder input, filed for review by PUCs, and periodically updated
- While a lot of attention has been focused on residential services and rates (80+ percent of charging occurs at home), non-residential charging is critical as well:
  - workplace charging
  - Fleet electrification
  - MHD use cases (public transit, school bus, last-mile logistics)
- Proper rate design – both short- and long-term is extremely important to ensure benefits of electrification are achieved

Background: ATE EV Rate Design Task Force

Goals: **Be proactive in state proceedings. Do not play defense.**
Find common ground with all stakeholders, including private EV charging companies.

Context

- **C&I rates:** Applicable to public charging, including DC fast charging, which is critical to alleviating range anxiety.
- Challenge is that public charging experiences low utilization in these early years of EV adoption.
- Solution is to support market transformation, while observing cost of service ratemaking principles along with public policy.

Rate Design Principles

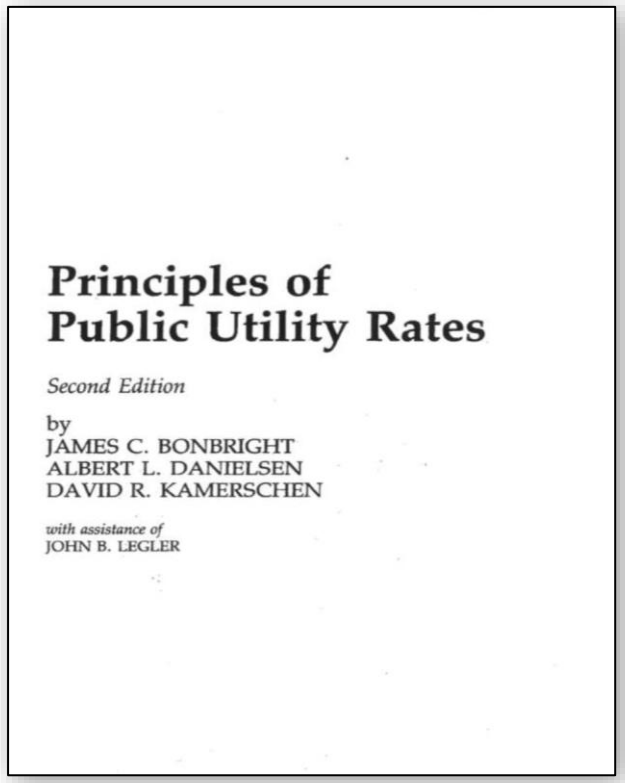
- ✓ A useful document for commissioners, staff, and parties in state proceedings.
- ✓ Recognizes that each state and utility are different, with unique precedents and rules for cost of service.
- ✓ A common denominator is that rates have to continue to meet the specific J&R standard and be sustainable over time.

What are the Goals of These Principles?

- Retain cost reflective rates to extent possible recognizing at the same time public policy goals of increased electrification
- Support “beneficial electrification”:
  - Provide customer benefits – fuel savings and incentives for off-peak use.
  - System benefits for all – reliability, integration, data, resiliency, lower rates.
  - Positive environmental (GHG reduction) and public health benefits.
- Shifting and shaping EV load through rates and technology is key to achieving beneficial electrification
- More difficult for non-residential charging depending on use case

Back to Basics of Ratemaking and Bonbright

- Why? Because ratemaking principles should be technology agnostic.
- EV charging is not an exercise in the “Utility of the Future.”
- Simply use the traditional regulatory toolbox.



Bonbright’s Four Principles

Capital Attraction Function

Establishes revenue requirements to attract adequate investment.

Efficiency Incentive Function

Regulation intended to compel market-like performance.

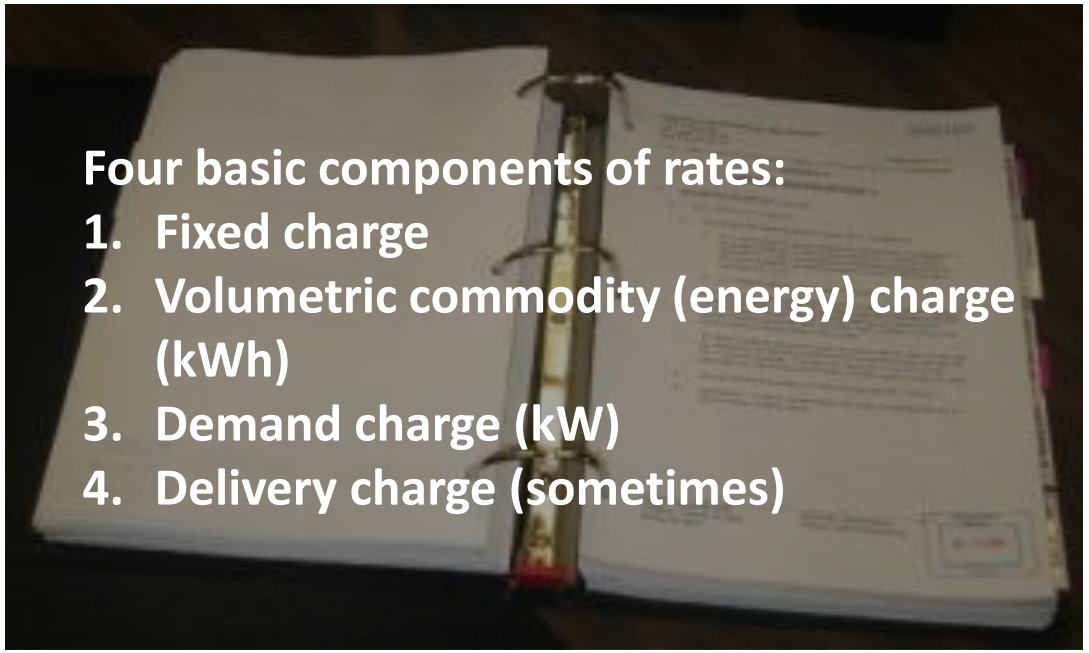
Demand Control Function

Scarcity
Supply and demand
Get the price signals right

Income-Distributive Function

Can address with equity / low-income programs and incentives.

Why Commercial Rates are Important for EVSPs



- ✓ Commercial rates are a complex area of ratemaking. Many commercial rates have been in place for decades.
- ✓ Demand charges are determined by an instantaneous peak; if volumetric use is low, there are few kWh over which to spread the demand charge.
- ✓ The demand charge component is typically the most contentious issue debated before public service commissions.

Consumers have range anxiety and will not buy an EV without adequate public charging (DC fast charging is particularly important).

→

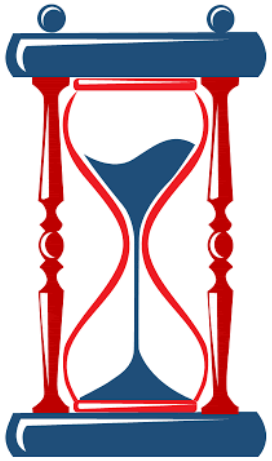
DC fast charging may incur high fixed demand charges, but utilization can be very low.

→

The result is that high demand charges are spread across very few kWh, which affects EVSP profitability.

The Solution: Transitional Relief

- The concept is to offer a path to profitability by altering the demand charge component of rate structures on a temporary basis to help meet public policy objectives and better fit today's public charging business models.
- The goal is to get us past this period of low utilization.
- Different companies adopt different terms – "discount," "credit," "subsidy," "economic development," to name a few. We adopt the term transitional relief.
- We believe this framework can satisfy the J&R standard by increasing volumetric commodity charges while lowering demand charges.



Other options: Utility tariffs are far from uniform, but the following have been shown to be based on cost of service at their core as well as J&R.

Non-demand charge C&I rates below a certain demand level.	Demand limiters, where a maximum demand level is applied to reduce rates.
Non-demand charge subscription rates with higher volumetric rates.	Rebates to offset the effect of the demand charge.

Some Examples of Transitional Relief of Demand Charges

- Southern California Edison (CA) – Demand Charge Holiday
  - Use economic development rate authority, including TOU
  - Initial 5 year relief from demand charges
  - After year 5, demand charge phased in over 5 years to 40% below current demand charge
- Xcel Energy (CO) – Critical Peak Pricing
  - Fleets (inc. transit) are targeted sector
  - Savings for avoiding critical peaks
  - Critical peaks may be called by utility the day prior
  - Can be up to four hours, between noon and 8 pm, and up to 15 times/year
  - In process of revising this CPP rate, filed with PUC on Oct. 15

Source: Atlas Public Policy, "Atlas EV Hub." Available: https://atlasevhub.com.

Examples of Transitional Relief of Demand Charges (cont.)

- Florida Power & Light (FL) – Demand Limiter
  - Applies to general service and general service large customers
  - Demand billed to the customer would be the lesser of the measured demand or the limited demand, which results in reducing charges to customers with less than 10% load factor
  - Thus EVSPs with higher utilization continue to pay demand charges

- National Grid – Demand Charge Discount
  - 100 % discount in Year 1
  - Years 2-10 a discount is applied to demand charge based on previous year utilization
  - Discount is from 100% to 0% (at 15% load factor)

Source: Atlas Public Policy, "Atlas EV Hub." Available: https://atlasevhub.com.

Other Examples of Demand Charge Mitigation

- Non-Demand Rates for Customers Below a Certain Threshold
  - Dominion Energy in VA (GS-2) and Portland General and Pacificorp (OR)
- Subscription Rates with Built-in Demand Charges
  - Pacific Gas and Electric and San Diego Gas & Electric
  - Based on historical data, and real load profiles
  - Time horizons vary, but generally in the 10 year timeframe
- EVSP Storage Rates
  - Sacramento Municipal Electric Utility District

Source: Atlas Public Policy, “Atlas EV Hub.” Available: https://atlasevhub.com.

Some Observations on Demand Charges

- There is no inherent problem with demand charges – they have been a successful means of allocating costs for efficiency and fairness
- There is a utilization problem at EVSEs in this early nascent stage of market development
- At some point of higher utilization (range of 15% to 30%), demand charges are preferable to EVSPs over volumetric/energy rates
- Thus, we believe the most optimal solution should be transitional relief which eliminates or mitigates demand charges for a limited period of time
- COS Regulation permits public policy objectives to be considered

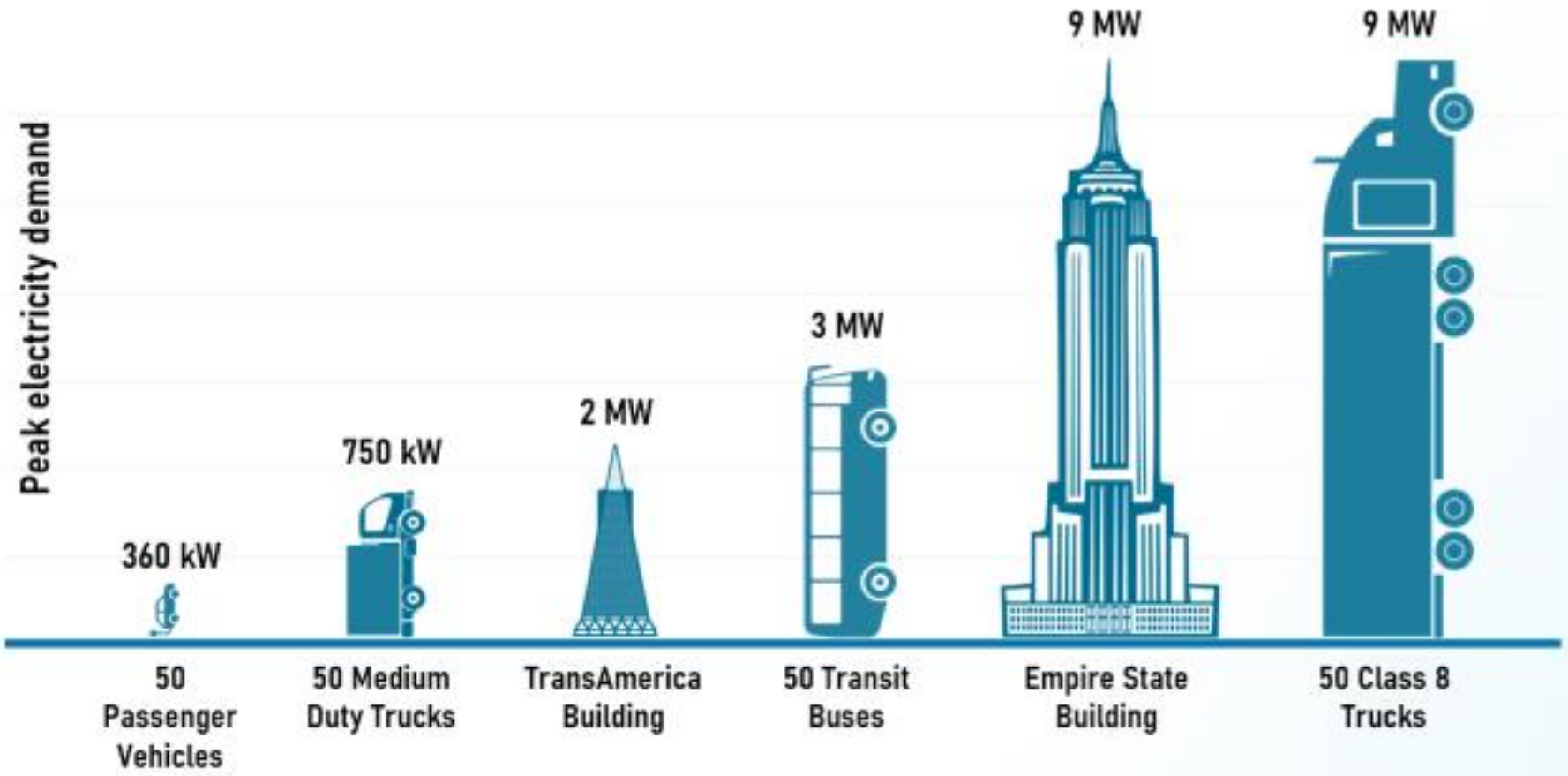
Observations on MHD Vehicle Use Cases

- Public transit BEBs (battery electric buses)
  - Overnight depot charging
  - Likely Level 2 charger (power level?)
  - Pantograph charging, en route
- School bus vehicles
  - Likely overnight charging
  - Depends on vehicle routing and cycles
  - V2G potential
  - Business and usage models are developing

Observations on MHD Vehicle Use Cases *(cont.)*

- Last-mile logistics
  - Large national fleets operating in IL (Amazon, UPS, FedEx, others)
  - Depends on location and size of depots
  - Overnight Level 2 charging may be possible, but managed charging as well
- Small-medium sized fleets
  - Illinois or regionally based fleets
  - Could be combination of depot charging, and public charging
  - Routing and accessibility concerns
- Publicly accessible charging locations
  - Definition of “publicly accessible” is key
  - Utility planning and coordination here is important
  - Make-ready infrastructure (rebates) could be viable business model, or utility ownership as option

Fleet EV Requirements in Perspective



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Best practices emerging from utilities and fleets for MHD use cases

- ***Fleet planning services***: establish and implement, with Commission approval, a group of dedicated staff who can work with fleet operators especially small-medium fleets.
- ***TCO analysis***: assist the fleet operators in helping to calculate an accurate TCO analysis incorporating rate design issues for the cost of electricity as fuel input, along with other aspects of operations and infrastructure. Compare to conventional fuel model.
- ***Early (preliminary) site assessments:*** get an early idea of the site, easements and ROW issues, location of electrical infrastructure and metering.
- ***Grid capacity issues:*** seek early engagement with distribution engineering of the relevant feeders and capacity, availability of 480/277 volt 3-phase service, location of substations.
- ***Planning:*** seek to coordinate the medium and long-term planning issues of utilities (loads and resources), fleet operators, transit agencies, OEMs in a constructive process.
- **Availability of State/Local Government incentives:** if available, the fleet planning group should make the fleet operators aware of such incentives, as well as utility-specific policies such as line extension policies and/or CIAC, make-ready incentives.
- ***Rate design issues:*** examine the current approved tariffs under the C&I rates (general service), and see what is applicable. If it is necessary to modify or clarify these for use by fleets, commercial EVSPs, determine how to clarify and streamline.

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